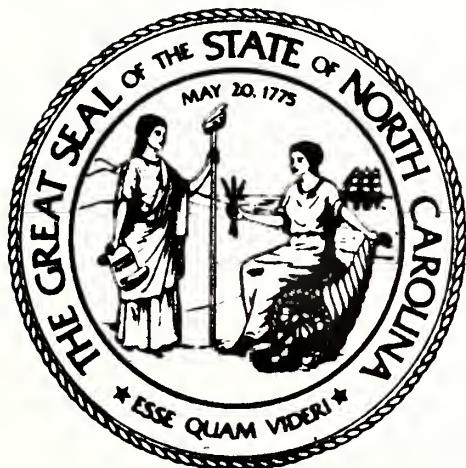


STATE OF NORTH CAROLINA



GOVERNMENTAL EVALUATION COMMISSION REPORT

ON

NORTH CAROLINA BOARD OF REGISTRATION

FOR

PROFESSIONAL ENGINEERS AND LAND SURVEYORS

APR 24 1979

INSTITUTE OF GOVERNMENT  
UNIVERSITY OF NORTH CAROLINA

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## SUMMARY

As directed by Chapter 143, Article 1.1 of the General Statutes, the Governmental Evaluation Commission has conducted its evaluation of the North Carolina Board of Registration for Professional Engineers and Land Surveyors created by Chapter 89C of the General Statutes.

The Commission concludes that the licensing of professional engineers and land surveyors is necessary to protect the public's health, safety and welfare.

In order to assure public participation in policymaking decisions of the Board, the Commission recommends that the Board of Registration for Professional Engineers and Land Surveyors be composed of three lay members who represent the public at large, three professional engineers, two land surveyors, and one member with dual registration, rather than the present board of four engineers and three land surveyors.

To enhance public protection, the Commission recommends, as a condition of license renewal, that the Board be given authority to require evidence of continued competency when, in the judgment of the Board, such competence is necessary to protect public health, safety and welfare.

The Commission also recommends that a program of licensure by discipline for engineers be adopted by the Board, and that the Board submit its plan to this Commission for evaluation.

The Commission recommends that the Board of Registration establish a reasonable limit on the number of unlicensed individuals a registrant of the Board may directly or personally supervise.

In conclusion, the Commission recommends that Chapter 89C of the General Statutes be reestablished with the statutory modifications as proposed in the recommendations.



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RECOMMENDATIONS:

1. The Commission recommends that regulation of the practice of engineering and land surveying be continued by the North Carolina Board of Registration for Professional Engineers and Land Surveyors.
2. The Commission recommends that the Engineering and Land Surveying Act be amended to provide for a nine member Board consisting of three (3) lay members who represent the public at large, three (3) professional engineers, two (2) land surveyors, and one member who shall hold dual registration as a registered land surveyor and a professional engineer. Neither of the two land surveyor members may hold such a dual registration.
3. The Commission recommends that the Board be allowed to charge a renewal fee of not more than \$30.00.
4. The Commission recommends that the present industrial exemption for engineers and land surveyors be maintained.
5. The Commission recommends that appropriate legislation be enacted to: (1) require the Board of Registration for Professional Engineers and Land Surveyors to adopt a program of licensure by discipline for engineers, to begin on July 1, 1981, and (2) require the Board of Registration for Professional Engineers and Land Surveyors to submit the plan of the program of licensure by discipline to the Governmental Evaluation Commission by July 1, 1980 to allow the Governmental Evaluation Commission to advise the General Assembly on the appropriateness of the program.
6. The Commission recommends that the Board of Registration for Professional Engineers and Land Surveyors shall require evidence of continued competency as a condition of license renewal, when necessary to protect the public health, safety, or welfare.
7. The Commission recommends that the Board of Registration for Professional Engineers and Land Surveyors establish a reasonable limit on the number of unlicensed individuals a registrant of the Board may directly or personally supervise at one time.
8. The Commission recommends that the Board of Registration be reviewed by the General Assembly before July 31, 1985.

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CONCLUSIONS:

1. The Commission concludes that regulation of the practice of engineering and land surveying is essential to protect the public health, safety, and welfare; however, the present statute and existing organization do not provide adequate protection.
2. The Commission concludes that lay representation on the North Carolina Board of Registration for Professional Engineers and Land Surveyors would allow for public input into the agency program and help balance the profession's and public's interest.
3. The Commission concludes in the area of "internal engineering" that the existence of a corporate entity and the economic control it has over the individual employee destroys any substantive protection licensing of the employee may offer.
4. The Commission concludes that the present licensing procedure for engineers whereby a non-specific license is granted (sometimes called "generic" licensing), allows an engineer to become trained and tested in one engineering discipline and to practice in a different discipline. This licensing procedure limits the protection afforded the public.
5. The Commission concludes that there is now no substantive evidence which would require licensed engineers to demonstrate continued competency when being relicensed, but that if the protection of the public health, safety, or welfare makes it necessary that continued competency be shown, the Board should require it.
6. The Commission concludes that greater protection would be afforded the public if the Board of Registration for Professional Engineers and Land Surveyors established a reasonable limit on the number of unlicensed persons allowed to practice under the "*responsible charge*" of one licensee.

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FINDINGS:

1. The Commission finds that North Carolina General Statutes 89C regulates the practice of engineering and land surveying and prohibits unauthorized practice of both.
2. The Commission finds that the North Carolina Board of Registration for Professional Engineers and Land Surveyors is composed entirely of members of the profession.
3. The Commission finds that North Carolina General Statutes §89C-25(2) exempts from the licensing requirement the practice of "internal engineering" by a person, firm, or corporation engaged in manufacturing, processing or producing a product.
4. The Commission finds that North Carolina General Statutes 89C generically licenses all engineers as "professional engineers" only and not by a specific discipline, and that the professional examination permits an applicant to choose among listed specialty areas in which he wishes to be tested.
5. The Commission finds that the North Carolina Engineering and Land Surveying Act includes no provisions to assure that all registrants of the Board maintain a minimum level of knowledge and skills necessary to perform professional service.
6. The Commission finds that North Carolina General Statutes §89C-25 exempts from the licensing requirements employees or assistants engaging in practice under the responsible charge of a professional engineer or registered land surveyor.



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INTRODUCTION TO GOVERNMENTAL EVALUATION COMMISSION

Chapter 143, Article 1.1, of the General Statutes terminates the regulation of various occupations. By repealing the laws establishing them, a number of boards and commissions that license or regulate occupations are scheduled to be terminated every two years. One-third of the total of these agencies will cease to exist on July 1, 1979, unless re-established by the General Assembly.

The statute requires that prior to termination each agency be reviewed by the Governmental Evaluation Commission. The Commission is charged with conducting a "performance evaluation of each program or function scheduled for termination."

Upon completion of the evaluation, the Commission will submit a report to the General Assembly, including a recommendation as to whether the program or function in question, and the responsible agency, "should be terminated, reconstituted, re-established, or continued with or without modification of the relevant statutes."

The statute states that the Commission's basic determination is "*of the need for continuance of an agency program or function*", and that it shall use 13 listed evaluation elements in making its determination. The Commission is not limited to the use of the 13 elements in determining the presence of a public need for the continuance of a program or agency.

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The Commission was authorized to employ a staff to help it in its work. The staff will conduct an evaluation and report its findings to the Commission in a staff report. The agencies may be given the opportunity to appear before the Commission and respond to the staff report. After making any modifications it believes desirable, the Commission will adopt a Proposed Commission Report.

The statute requires that public hearings be held on the proposed report, after a notice of the substance of the report and other details of the hearing is published. Upon completion of the hearing and consideration of the submitted evidence and arguments with respect to this evaluation, the Commission shall adopt its final recommendations. These recommendations will then be submitted to the General Assembly for its deliberation.

### SCOPE OF THE EVALUATION

The purposes of the evaluation process are stated in the statute creating the Governmental Evaluation Commission.

*§143-34.10. Findings and purposes. - The General Assembly finds that state government actions have produced a substantial increase in numbers of agencies, growth of programs, and proliferation of rules and regulations and that the whole process developed without sufficient legislative oversight, regulatory accountability, or a system of checks and balances. The General Assembly further finds that by establishing a system for the termination, continuation, and re-establishment of such agencies, it will be in better position to evaluate the need for the continued existence of existing and future regulatory bodies.*

A recommendation on the "need for the continued existence of existing....regulatory bodies" is the end product of this evaluation process. An evaluation of "need" for the continued existence must focus on the public benefits resulting from the continued existence of a program or agency. The benefits to the persons the agency regulates are not reasons for continuing the agency.

In focusing on "need" the inevitable question that must be considered is: What is the harm to the public if there is no regulation of the occupation?

It can be argued that some possible harm is present in allowing unlicensed persons to serve the public in any occupation or capacity. There is always some risk that a member of the public will choose the wrong person in a selection process where there is no knowledge of competency or honesty. However, this selection process is a hallmark and strength of the free enterprise system.

On the other hand, regulation in any form, by any means, is

restrictive of certain individual liberties protected by Article 1.1 of the North Carolina Constitution, which provides that all persons are afforded rights of "life, liberty, and the enjoyment of the fruits of their own labor, and the pursuit of happiness." The state, through its police power, may enact legislation which invades these rights only if there is a real and substantial relationship between the legislation and the protection of the public health, safety, or welfare.

In the evaluation process, the underlying question asked by the legislature can be stated: Is this regulation a proper exercise of the state's police power? Is the public need for regulation sufficient to justify making available to the regulatory body the authority of the State of North Carolina to imprison, to fine, and to deprive the right of earning a living to a person who violates the regulatory statute? The regulatory statute makes available to the agency, for enforcement, the State Judiciary, the State Attorney General, the police, and the power to collect money for use of the agency.

The evaluation question to be answered could be stated another way: Does this regulatory statute protect the public from potential serious harm so that if there were no statute, serious harm would be done to the public's health, safety, or welfare?

The key words are "serious harm". If the answer to the evaluation question is "No", then there is no public need for the program or agency and the statute must not be continued.

If the answer is "Yes", then the Commission must look at all parts of the program and agency to determine if they are doing what the statute

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calls for them to do in an efficient and effective manner.

The General Assembly is the final authority on the recommendations of the Commission. A Committee of Reference in each House of the General Assembly will hold a public hearing on the recommendations relating to each agency. In the hearing the agency has the burden of demonstrating a public need for the continued existence of the agency and its program or function.

## HISTORICAL BACKGROUND

Concern over the profession of engineering goes back to ancient civilization and the Laws of Hamurabi some 3,000 years ago. Sections 229 and 230 of the Code of Laws of Hamurabi, dealing with builders provided:

*"If a builder erects a house for a man and does not make its construction firm, and the house which he built collapsed and caused the death of the owner of the house, the builder shall be put to death. If it causes the death of a son of the owner of the house, they shall put to death a son of that builder."*

Before the regulation of engineering came about, notaries, buyers, and other people were making maps and signing them as engineers or as surveyors, and gross inaccuracies were prevalent. The first state to control the practice of engineering was Wyoming in 1907. In 1908, Louisiana passed a similar law. By 1919, seven other states had passed laws regulating the practice of engineering. Interest continued to mount, and in 1921, eight new states, including North Carolina, enacted regulatory statutes. North Carolina's enabling statute is 89C of the General Statutes. By 1947, all 50 states had passed registration laws for engineers. Presently all states along with five legal jurisdictions, (D.C., Puerto Rico, Canal Zone, Guam, and the Virgin Islands) have laws regulating the practice of engineering or land surveying, or both.

All state boards of registration for professional engineers and land surveyors strive to promote the general welfare and protect the public by safeguarding life, health, and property. Since most individual clients do not have the special knowledge to evaluate the competence of the professionals they employ, registration of professionals was adopted to

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assure that the practitioner has the minimum standards of competence.

Before an applicant can be registered he must submit adequate proof of education and experience, as well as passing the examination. Normally, applicants must have a 4 year engineering education as well as a 4 year block of experience.

The U. S. presently has 55 independent registration boards for engineers or land surveyors, or both. A coordinating organization also exists known as the National Council of Engineering Examiners. All 50 state boards and the five boards of the legal territories are members of NCEE.

State boards' composition varies from state to state. North Carolina has a board of 7 members, 4 professional engineers, and 3 registered land surveyors, all of whom are appointed by the Governor. Some states have public members serving on their registration boards. California, for example, has a board composed of 11 members with 6 of those being public members.

Presently there are more than one million engineers in the United States with at least 30% being registered in at least one state.

The requirement of registration of land surveyors has not progressed as quickly as in the profession of engineering. The District of Columbia and the Canal Zone have not adopted regulatory systems for land surveyors. Forty-four states have joint land surveyors and engineering boards and 11 states have separate boards for land surveyors.

### EVALUATION ELEMENTS

The statute lists 13 evaluation elements to be used in making a determination of the need for continuance of an agency program or function. The statute specifically allows other evaluation elements to be used.

The performance evaluation of the North Carolina Board of Registration for Professional Engineers and Land Surveyors using the 13 elements follows.

#### EVALUATION ELEMENT #1

*AN IDENTIFICATION OF THE OBJECTIVES INTENDED  
FOR THE AGENCY PROGRAM AND THE PROBLEM OR  
NEED WHICH THE PROGRAM WAS INTENDED TO ADDRESS.*

The objectives of the statute (G.S. Chapter 89-C) are to assure that the public is protected by having qualified "engineers" to apply special knowledge of the mathematical, physical, and special sciences to engineering services or creative work, insofar as they involve safeguarding life, health, or property. These engineering services include consultation on and the investigation, evaluation, planning, and design of industrial or consumer products or equipment of a mechanical, electrical, hydraulic, pneumatic or thermal nature. The engineering services also include the observation of construction for the purposes of assuring compliance with drawings and specifications, and performing such other services necessary

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to the planning, progress, and completion of any of the above.

The objectives of the statute as it relates to land surveying are to assure that the public is protected by having qualified "land surveyors" to make surveys and to apply special knowledge of the principles of mathematics, the related physical and applied sciences, and the relevant requirements of law for adequate evidence, to the act of measuring and locating lines, angles, elevations, natural and man-made features in the air, on the surface of the earth, within underground workings and on the beds of bodies of water, and for using and perpetuating the measurements that represent these surveys.

The problem or need addressed in licensing engineering is the harm that would come from allowing frauds, cheats, and incompetents to pose as engineers and plan for and design structures, buildings, machines, and other equipment which the public uses.

The problem or need addressed in licensing land surveying is the once common practice of allowing any person to make maps, design subdivisions, and filing plats of building lots in public records, and signing these documents as "surveyors". Gross errors were common.

EVALUATION ELEMENT #2

*AN ASSESSMENT OF THE DEGREE TO WHICH THE ORIGINAL  
OBJECTIVES OF THE AGENCY PROGRAM HAVE BEEN ACHIEVED  
EXPRESSED IN TERMS OF PERFORMANCE, IMPACT, OR  
ACCOMPLISHMENTS OF THE PROGRAM AND OF THE PROBLEM  
OR NEED WHICH IT WAS INTENDED TO ADDRESS. SUCH  
ASSESSMENT SHALL EMPLOY PROCEDURES OR METHODS OF  
ANALYSIS WHICH THE COMMISSION DETERMINES TO BE  
APPROPRIATE TO THE TYPE OR CHARACTER OF THE PROGRAM.*

The objectives of the Board of Registration for Engineers and Land Surveyors are established in the statute. The statute states, "*in order to safeguard life, health, and property, and to promote the public welfare, the practice of engineering and the practice of land surveying*" are subject to regulation in the public interest.

All agencies under review by the Commission were requested to define their objectives. The Board of Registration for Engineers and Land Surveyors perceived its objectives as being those established by statute. The Board stated it met the public's interest through:

- a. examination and registration;
- b. enforcement, and
- c. professional standards and development

The Board issues licenses by examination. Applicant qualifications are determined by education, experience and examination results. To become licensed as a professional engineer, the applicant must file proper application with the Board submitting proof of his good character.

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Engineering licenses are divided into two (2) categories; engineer-in-training, and professional engineer.

An engineer-in-training is defined as one who complies with the requirements for education and experience, character, and has passed an examination in the *fundamental* engineering subjects.

An engineer is defined as a person, who by reason of his special knowledge and use of the mathematical, physical and engineering analysis and design, acquired by education and experience, is qualified to practice engineering.

A professional engineer is one who is duly licensed.

To qualify for the engineer-in-training examination, the candidate must have graduated from a four (4) year course of study in engineering or a related science curriculum approved by the Board. If the applicant has graduated from a non-approved curriculum of four (4) or more years, he may submit evidence of equivalent education and experience and a record of four (4) or more years of progressive experience on engineering projects.

To be eligible for admission to the professional examination, the applicant must be a holder of an engineer-in-training certificate along with four (4) years of experience, or have graduated from an approved curriculum in engineering and have a four (4) year record of experience.

If the applicant has not graduated from an approved curriculum, he may submit proof of eight (8) years of experience. If an applicant has not met any of the educational requirements, he may submit proof of twenty (20) years or more of experience.

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The professional examination administered by the Board is developed by the National Council of Engineering Examiners (NCEE). Candidates for the professional examination are required to only answer eight (8) out of 120 questions from a choice of disciplines. Simply stated the candidate is not required to answer all questions on each listed discipline. The disciplines tested are as follows:

chemical	mechanical	industrial
civil	agricultural	manufacturing
electrical	ceramic	nuclear
petroleum	sanitary	structural

This "choice of questions" process is somewhat questionable in that the individual, once licensed, may practice any discipline he chooses, though he may have only been thoroughly tested in disciplines.

Land surveying licenses are divided into two (2) categories; land surveyor-in-training and registered land surveyor.

Applicants for the land surveyor-in-training license must possess an associate degree in surveying technology approved by the Board, or have equivalent education and surveying experience satisfactory to the Board. One year experience under a registered land surveyor is required in addition. Applicants may also qualify by having a Bachelor of Science degree in land surveying or in an equivalent curriculum approved by the Board.

To qualify for the principles and practice examination for land surveyors, the applicant is required to have a Bachelor of Science in surveying or other equivalent curriculum approved by the Board along with a record satisfactory to the Board of one year or more of practical experience. One year of the required experience must be under a practicing

registered land surveyor.

An applicant with an associate degree in surveying technology or civil engineering technology, or with equivalent education and surveying experience along with three (3) years practical experience qualifies for the professional examination as well.

Eligibility for the professional examination may be acquired by holding a land surveyor-in-training certificate along with two (2) additional years or more experience. Candidates who hold a high school diploma or equivalence certificate are eligible for the professional examination by submitting proof of six years practical experience. The applicant is further required to submit exhibits, drawings, plats or other tangible evidence of land surveying work done by him.

The professional engineer and registered land surveyor are required to renew their certificate annually by payment of a fee. This is the only renewal requirement. The only proof of competency is the initial requirement that must be met for entry into the profession.

The Board seemingly accomplishes its examination and registration objective. (See Tables 1 and 1A)

#### ENFORCEMENT

The Board of Registration for Professional Engineers and Land Surveyors has established standards of professional conduct for its licensees. The Board is empowered by statute to suspend or revoke registration when found guilty of one of the stated offenses. The Board may pursue criminal prosecution of any person who violates the provisions of the statute. The Board is also given power to seek

injunctive relief, as well as power to levy monetary penalties for violations of the statute. For the enforcement history see Tables 2, 2A, and 3.

PROFESSIONAL STANDARDS

The Board is statutorily authorized to assist in the development of engineering and land surveying standards and to conduct instructional programs for registrants and non-registrants. The Board states that it accomplishes this objective through cooperation with state agencies, city and county agencies, accredited educational institutions and funding for student aid through established scholarship programs.

A review of the Board's audit report for fiscal year 77-78 revealed that during this time period the Board expended \$980.00 for educational assistance.

EVALUATION ELEMENT #3

*A STATEMENT OF THE PERFORMANCE AND ACCOMPLISHMENTS  
OF THE AGENCY PROGRAM IN THE LAST FISCAL YEAR AND  
OF THE BUDGETARY COSTS INCURRED IN THE OPERATION  
OF THE PROGRAM.*

The North Carolina Board of Registration for Professional Engineers and Land Surveyors primarily functions for the purpose of registration, enforcement, and adoption of professional standards.

During the last fiscal year the Board reviewed 1,091 new applications for registration, administered examinations for 1,292 applicants, and registered 598 new Professional Engineers and Registered Land Surveyors.

Relative to its enforcement function, the Board during the last fiscal year considered forty-five (45) complaints against persons practicing engineering or land surveying in the State. This resulted in thirty-six (36) cases being disposed of through correspondence or voluntary compliance with the statute, five (5) cases resulted in formal hearings before the Board, and four (4) cases were referred to the office of the Attorney General for appropriate court action.

During the last fiscal year the Board, in an effort to achieve its objective of "professional standards and development", held a public hearing for the purpose of reviewing, revising, and readopting the Board's regulations. The Board also participated in the scholarship fund of College Foundation, Inc. as well as contributing to educational workshops.

Also during the last fiscal year the Board incurred expenses totalling \$169,322.27. (See Table 4 ) The Board estimates that it spends approximately 59% of its budget on registration, 28% on enforcement, and 13% on pro-

fessional standards and development.

EVALUATION ELEMENT #4

*A STATEMENT OF THE NUMBER AND TYPES OF PERSONS  
SERVED BY THE AGENCY PROGRAM.*

It is the contention of the Board of Registration for Professional Engineers and Land Surveyors that it serves the entire public of the State of North Carolina by selectively registering those persons qualified to perform engineering and land surveying services in the State.

While very few members of the general public would require the direct services of a professional engineer, the services of a registered land surveyor are often called upon by the public. Registered land surveyors determine property boundaries, and as such their services are used each year by numerous individuals, municipalities and private corporations engaged in real property transactions.

EVALUATION ELEMENT #5

*A SUMMARY STATEMENT, FOR THE LAST COMPLETED FISCAL YEAR  
OF THE NUMBER BY GRADE, AND COST OF PERSONNEL EMPLOYED  
IN CARRYING OUT THE AGENCY PROGRAM AND A SUMMARY  
STATEMENT OF THE COST OF PERSONNEL EMPLOYED UNDER CONTRACT  
IN CARRYING OUT THE PROGRAM.*

The full-time staff of the office of the Board of Registration for Professional Engineers and Land Surveyors consists of four people; an Executive Secretary, an Administrative Secretary, and Administrative Assistant (Engineering) and an Administrative Assistant (Land Surveying).

The part-time staff of the office of the Board of Registration consists of five people; the Board Secretary (who is a member of the Board), a Field Investigator, and three individuals who provide seasonal clerical assistance.

The Board also utilizes other professional services in the form of accounting, computer, examinations, and legal services. In addition the Board uses the services of the National Council of Engineering Examiners.

Total cost of personnel for the last completed fiscal year amounted to \$106,945.00. (See Table 5 )

EVALUATION ELEMENT #6

*AN ASSESSMENT OF THE DEGREE TO WHICH THE OVERALL  
POLICIES OF THE AGENCY PROGRAM, AS EXPRESSED IN  
THE RULES, REGULATIONS, ORDERS, STANDARDS, CRITERIA,  
AND DECISIONS OF THE AGENCY MEET THE OBJECTIVES OF  
THE GENERAL ASSEMBLY IN ESTABLISHING THE PROGRAM.*

As noted in Evaluation Element #1, the objective of the General Assembly in creating the Board of Registration was to *"safeguard life, health, and property, and to promote the public welfare."*

It is generally accepted that structural failures due to poor design can affect the public's health and safety. To assure the public's protection, building codes have been established for the most common and readily identifiable types of design and functional difficulties. In most single residential structures this protection is adequate. As structures increase in complexity the relationships between the various functional elements not only increases but becomes interdependent on the proper functioning of each element. It is here that proper design adds significantly to the protection of the public offered by the building codes.

It is also generally accepted that improper land surveying work can cause economic harm, not only to the user of land surveying services, but to adjoining property owners and future property owners.

The profession of engineering is more diversified than ever before. The professional examination recognizes as many as twelve (12) disciplines in the engineering field.

North Carolina, similar to numerous other states, licenses engineers as "professional engineers" only, but not by a specific discipline. Once licensed as a professional engineer, the licensee is authorized to practice in any area of engineering.

The potential for harm in this situation lies in the fact that the incompetency of the licensee may go undiscovered until the harm has been done.

The number of engineers who practice outside of their discipline, or the area in which they have gained experience, or the problems caused by such a practice are unclear. However, greater protection could be afforded the public if the engineer was licensed by specialty.

There are some limiting factors in the agency program which have the potential of lessening the protection extended to the public. The limiting factors are the cursory regulations of the many engineering disciplines, the numerous exemptions found in the statute, and the lack of continued competency requirements.

There are numerous exemptions in the North Carolina Engineering and Land Surveying Act. Specifically exempt from the licensing requirements are employees who perform professional services in connection with the internal engineering activities of manufacturing firms. This exemption could potentially subject the public to unscrupulous and incompetent practitioners. However, the existence of a corporate entity between the licensed practitioner and the consumer public minimizes the direct influence licensure would have on the behavior of the practitioner. In other words, licensing would not substantially add to the protection of the public.

The licensing law requires professional engineers and land surveyors to pay a renewal fee each year. There is no requirement that the candidate demonstrate his continued competency at the time of renewal. Passing an examination for licensure in the distant past is not sufficient evidence of current competency. Arguments have been made that professional standards and the market place require continued professional development. If this is true it would negate the benefits of state licensure and support the argument for deregulation of the profession.

Statements of objectives were obtained from the agency in response to written questions.

OBJECTIVES:

The present objectives of the Board of Registration of Professional Engineers and Land Surveyors as the Board sees them, and the numerical weights it puts to them are:

- (a) examination and registration (50)
- (b) enforcement (35)
- (c) professional standards and development (15)

The purpose of the Board is, through licensing, to safeguard the life, health, and property of the public, and to promote the public welfare.

The main objective of the Board is to examine and register (license) those persons fulfilling licensing qualifications. A corollary objective is to deny registration to those persons who cannot show the minimum qualifications. The statute unequivocally states, "In no event shall there be

representation of or holding out to the public of any engineering expertise by unregistered persons. However, the statute exempts many "engineers" and others from application of the statute. (See G.S. 89C-25).

ENFORCEMENT:

The Board regulations establish standards of professional conduct for its licensees. The regulations provide that the licensee, (a) shall perform his services only in areas of his competence; (b) shall issue public statements only in an objective and truthful manner; (c) shall avoid conflicts of interest; (d) shall solicit or work only on the basis of his qualifications; (e) shall associate only with reputable persons; and (f) shall not advertise his professional services.

To assure compliance with the standards of conduct as well as other rules and regulations, the Board has the power to seek injunctive relief, the power to suspend, to refuse to renew, or to revoke the certificate of registration, and the power to require re-examination of a licensee. The Board may levy a fine of up to \$500.00 for any licensee who is found guilty of deceit, gross negligence, incompetence, or misconduct in the practice of the profession, or who violates the rules of professional conduct.

The Board may revoke or suspend a certificate or authorization of an engineering corporation.

Any person may prefer written charges under oath against any licensee for fraud, deceit, gross negligence, incompetence, misconduct, or violation of the rules of professional conduct.

The statute provides that any person who violates the statute is guilty

of a misdemeanor and may upon conviction, be sentenced to fine or imprisonment.

As stated in the regulations, the overall policy of the Board is to encourage educational programs designed to prepare persons for registration, as well as to enhance the skills of registered professional engineers and registered land surveyors in order to better serve the people. The statute provides that the Board is empowered to spend funds to conduct and establish instructional programs for persons who are currently registered, as well as for refresher courses for persons interested in obtaining adequate instruction or programs of study. The Board is further authorized to carry out such programs through extension courses. To this date, the Board does not have any mandatory educational programs or recertification requirements.

A review of the Board's objectives indicate that "professional standards and development" rates 15 on a scale of 100. This objective consisted of 13% of the Board's expenditures. However, it included conducting public hearings for code revisions, contributing to College Foundation, Inc., and contributing to educational workshops. For fiscal year 77-78, the Board expended a total of only \$980.00 in educational assistance funds.

Although the statutes provide that the Board may refuse to renew a license as part of its disciplinary actions, there is no requirement that licensees maintain a certain standard of proficiency or competency as a prerequisite for renewal.

EVALUATION ELEMENT #7

*AN ASSESSMENT OF THE EFFECT OF THE AGENCY PROGRAM  
ON THE STATE ECONOMY INCLUDING COSTS TO CONSUMERS  
AND BUSINESSES.*

It is generally accepted that the cost of regulation is inevitably passed from the practitioner to the public. While there are no accurate means of verifying this assumption, there is no reason to believe that the cost of regulation would not be shifted in much the same manner as operating costs are shifted. This cost can be expressed in terms of the Board of Registration's total revenues for any given period. For example, the Board's revenue for fiscal year 77-78 amounted to \$179,594.78. (See Table 6 ) If this figure is spaced among the large corporations and governmental entities who use engineering services, and among the individuals who use land surveying services, it is minimal.

EVALUATION ELEMENT #8

*AN EVALUATION OF THE REPORTING AND RECORD-KEEPING  
REQUIREMENTS AND ACTIVITIES OF THE AGENCY PROGRAM,  
INCLUDING THE MANAGEMENT AND CONTROL OF INFORMATION  
AND RECORDS AND THE VALUE OF THE INFORMATION  
GATHERED COMPARED TO THE COST TO RESPONDENTS, AND  
AN ASSESSMENT OF METHODS TO REDUCE AND SIMPLIFY THE  
REPORTING AND RECORD-KEEPING REQUIREMENTS.*

The Board of Registration is required by statute to keep a record of its proceedings and a register of applicants for registration. The Board is further required to prepare and distribute a roster showing the names, residence, and place of business of all registered engineers and land surveyors. In addition, the Board is required to submit to the Governor a report on its transactions for the preceding year and file a copy of such report with the Secretary of State.

Although not statutorily required to do so, the Board maintains records of complaints or violations and records of investigations of licensees.

A review of the violations files of the Board was conducted. The records were kept in an efficient manner and information sought was easily accessible.

Registrants of the Board are not required to report to the Board.

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EVALUATION ELEMENT #9

*A SUMMARY STATEMENT OF THE BUDGET AND PROGRAM OF  
THE AGENCY FOR THE CURRENT FISCAL YEAR AND BUDGET  
PROJECTIONS FOR THE NEXT SUCCEEDING FISCAL YEAR IF  
THE PROGRAM WERE TO BE CONTINUED.*

The agency program for the current fiscal year is substantially similar to the agency program for last fiscal year. The Board projects an income of \$187,200.00 for the current fiscal year and expenses totalling \$194,000.00 for the same time period. (See Table 6 )

EVALUATION ELEMENT #10

*AN ASSESSMENT OF WHETHER THE AGENCY HAS PERMITTED  
QUALIFIED APPLICANTS TO SERVE THE PUBLIC, AND  
WHETHER THE AGENCY HAS ENCOURAGED PARTICIPATION BY  
THE PUBLIC IN MAKING ITS RULES AND DECISIONS, AS  
OPPOSED TO PARTICIPATION SOLELY BY THE PERSONS IT  
REGULATES.*

The extent to which the agency permits qualified applicants to serve the public revolves primarily around the entry restrictions imposed by the agency.

The Board of Registration for Professional Engineers and Land Surveyors provides for entry into the profession through its licensing examination. Each applicant for license as a professional engineer or

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license as a registered land surveyor is required to take sixteen (16) hours of examinations.

In addition the applicant must satisfy the experience prerequisites prior to taking the principles and practice examination. This requirement could potentially limit the number of qualified applicants allowed to serve the people. The experience gained by the candidate may vary depending upon the size of the firm the candidate is employed by. Another limiting factor is having to gain the practical experience prior to the professional examination. Applicants should be allowed to sit for the professional examination when they feel they are ready. *Licensure* could be dependent upon satisfying an appropriate experience requirement. If the applicant gains the required experience and then discovers he has difficulty with the examination, he is forced to wait until the professional examination is administered again before being allowed to join the mainstreams of professionals allowed to serve the public.

The Board of Registration for Professional Engineers and Land Surveyors is composed by statute of members of the profession. Since there is no provision for public membership on the Board, public input or participation is not guaranteed.

The Board of Registration contends that Board members are appointed to serve the public and, as such, does not feel that a public member is necessary. However, the Board has no objections to the appointment of a public member.

Currently the Board publishes notice of all rulemaking hearings and allows for public participation therein.

EVALUATION ELEMENT #11

*AN EVALUATION OF THE EXTENT TO WHICH OPERATION  
HAS BEEN EFFICIENT AND RESPONSIVE TO PUBLIC NEEDS.*

The North Carolina Board of Registration for Professional Engineers and Land Surveyors in most instances is responsive to the public's needs. There are two factors; however, which diminish the Board's efforts.

The first limiting factor is the failure of the Board to monitor licensees and require assurance of continued competency. Presently, the Board relies exclusively on the complaint process to identify problem licensees. We can find no substantive evidence to excuse registrants of the Board from demonstrating continued competency. Yet the Board has taken no steps to introduce a program of recertification. We question the adequacy of the complaint process and the seemingly overwhelming reliance the Board appears to place on the professional's belief in his ethical duty to the public.

Another area of concern which limits the means by which the Board responds to the public need is generic licensing of professional engineers. This practice allows an engineer to become trained and tested in one engineering discipline and practice in an entirely different discipline. By allowing this, the Board fails to fully control the practice of engineering.

EVALUATION ELEMENT #12

*AN EVALUATION OF THE EXTENT TO WHICH COMPLAINTS  
HAVE BEEN EXPEDITIOUSLY PROCESSED TO COMPLETION  
IN THE PUBLIC INTEREST.*

The length of time between the receipt of a complaint and the final disposition varies depending upon the seriousness of the offense and the required investigation. A review of the complaint (violations) filed with the Board indicates that complaints are efficiently processed and investigated.

EVALUATION ELEMENT #13

*AN ANALYSIS OF THE SERVICES AND PERFORMANCE ESTIMATED  
TO BE ACHIEVED IF THE AGENCY OR AGENCY PROGRAM WERE  
CONTINUED.*

If continued in its present form, the Board of Registration would perform in much the same way as it presently does. Its primary responsibilities would continue to be licensing and enforcement.

LICENSING PROFILE - ENGINEERING

FISCAL YEAR  
 (December 1 - November 30)

	1978*	1977	1976	1975	1974
<u>APPLICATIONS:</u>	1,062	1,091	1,029	1,039	896
For examination	827	813	806		
For reciprocity	235	278	223		
Under grandfather clause	0	0	0	0	0
<u>EXAMINATIONS:**</u>					
Administered - Exam I	203	684	667	668	539
Exam II	152	356	374	271	237
<u>LICENSES ISSUED:</u>	447	542	447	450	501
By examination (Exam II) ***	232	282	253	187	203
By reciprocity	215	260	194	263	298
Under grandfather clause	0	0	0	0	0
<u>LICENSES RENEWED:</u>	6,095	5,669	5,371	5,018	4,584
<u>TOTAL NUMBER OF LICENSED PRACTITIONERS:</u>	6,538	6,201	5,771	5,456	5,066

\* Figures for 1978 thru September 21, 1978

\*\* All examinations given twice each year, in April and November.

\*\*\* Registration issued after successful completion of Exam II only.

LICENSING PROFILE - LAND SURVEYING

FISCAL YEAR  
 (December 1 - November 30)

	1978*	1977	1976	1975	1974
<u>APPLICATIONS:</u>					
For examinations	184	90	750	261	111
For reciprocity	-0-	-0-	-0-	-0-	-0-
Under grandfather clause	-0-	-0-	(822) **		0
<u>EXAMINATIONS:***</u>					
Administered - Exam I	49	124	138	110	100
Exam II	77	128	90	119	146
<u>LICENSES ISSUED:</u>					
By examination (Exam II)****	83	56	31	50	57
By reciprocity	0				
Under grandfather clause	0	0	707	115	0
<u>LICENSES RENEWED:</u>	1,792	1,758	1,016	902	861
<u>TOTAL NUMBER OF LICENSED PRACTITIONERS:</u>	1,874	1,810	1,774	1,072	912

\* Figures for 1978 thru September 21, 1978

\*\* Professional Engineers granted Land Surveying licenses following enactment of G.S. 89C-13(b)(1)g which hereafter required engineers to demonstrate specific qualifications prior to registration as land surveyors.

\*\*\* All examinations given twice each year, in April and November.

\*\*\*\* Registration issued after successful completion of Exam II only.

HISTORY OF ENFORCEMENT - ENGINEERS

FISCAL YEAR  
(December 1 - November 30)

	1978	1977	1976	1975	1974
<u>TOTAL NUMBER OF LICENSED PRACTITIONERS:</u>	6,538	6,201	5,771	5,456	5,066
Number of complaints processed	14	17**	28	37	28
Number of disciplinary hearings	1*	3	3	2	0
Number of licenses suspended	0	0	0	0	0
Number of reprimands	2	0	1	1	0
Number of fines	0	3	1	1	0
Number of injunctions	1	0	1	2	0
Number of revocations	0	0	0	0	0

HISTORY OF ENFORCEMENT - LAND SURVEYING

FISCAL YEAR  
(December 1 - November 30)

	1978	1977	1976	1975	1974
<u>TOTAL NUMBER OF LICENSED PRACTITIONERS:</u>	1,874	1,810	1,774	1,072	912
Number of complaints processed	23	23**	39	26	18
Number of disciplinary hearings	3*	4	5	3	1
Number of licenses suspended	4	1	2	1	1
Number of reprimands	1	1	2	1	0
Number of fines	1	1	2	0	0
Number of injunctions	0	4	2	0	2
Number of reprimands	0	0	0	0	0
Number of revocations	0	0	0	0	0

\* Includes hearing for one individual for both surveying and engineering violation.

\*\* Administrative filing system changed during year; figure includes estimate of the number of complaints that did not warrant Board action.

COMPLAINT PROFILE

BY WHOM	AGAINST WHOM	WHAT REASON	TOTAL
1. Licensee	Licensee	Work Related	8
2. Licensee	Non-Licensee	No License	15
3. General Public	Licensee	Work Related	15
4. General Public	Non-Licensee	Work Related	2
5. General Public	Non-Licensee	No License	5

\*Random Selection from the Violations Files (includes both engineers and land surveyors).

\*Distribution of complaints filed over random years.

EXPENDITURES - FISCAL YEAR 1977

General Expenditures

Telephone & Telegraph	\$ 1,520.65
Postage	5,463.31
Printing	12,246.76
Office Supplies & Expenses	3,754.23
Rent	12,410.11
Advertising	799.07
Repairs & Maintenance	362.90
Miscellaneous	129.42
Insurance & Bonding	530.00
Refunds - Engineers	1,475.00
Refunds - Land Surveyors	65.00
Prior Year Payroll Tax	<u>1,504.75</u>

TOTAL GENERAL EXPENDITURES \$40,261.20

Professional Services

Legal Fees	\$15,425.18
Scoring Examinations	21,357.23
Audit Fee	384.93
Accountants Fees	950.18
Computer Services	2,409.38
Dues & Subscriptions	<u>2,035.00</u>

TOTAL PROFESSIONAL SERVICES \$42,561.90

Board Member Expenses

Board Member - Per Diem	\$ 5,668.00
Board Member - Transportation & Subsistence	<u>6,689.00</u>

TOTAL BOARD MEMBER EXPENSES \$12,357.00

Salaries & Wages

Salaries & Wages	\$64,383.58
Social Security Contributions	3,339.47
Retirement Contributions	4,701.80
Disability & Hospitalization Benefits	<u>737.32</u>

TOTAL SALARIES & WAGES \$73,163.17

Educational Funds

Educational Assistance	\$ 980.00
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TOTAL EXPENDITURES \$169,322.27

COST OF PERSONNEL

Salaries and Wages:

	<u>Number</u>	<u>Cost</u>
Executive Secretary	1	\$25,980.00
Administrative Secretary	1	11,625.00
Administrative Assistants (Eng & LS)	2	16,129.00
Board Secretary	1	2,400.00
Field Investigator	1	2,980.00
Part-time Clerical Assistants	3	5,269.00
<hr/>		
Total Salaries and Wages		\$64,383.00

Professional Services:

Legal Fees *	\$15,425.18
Accounting Fees	<u>950.18</u>
Total Professional Fees	\$16,375.36

\* Includes Attorney's fee, court costs, and costs of court recorders

RECEIPTS - FISCAL YEAR 1977 and 1978

	<u>1977 Actual</u>	<u>1978 Budget</u>
Applications Fees	9,995.00	
Registration Fees	4,620.00	
Application & Registration Fees		15,000.00
Examination Fees	28,995.00	22,500.00
Re-Examination Fees	6,055.00	6,000.00
EIT Fees		10,000.00
Renewal Fees	113,740.00	116,000.00
Late Renewal Penalties	990.60	1,000.00
Registration Kits	2,642.00	2,600.00
Fines	500.00	2,000.00
Duplicate Certificates	173.50	200.00
Temporary Permits	1,700.00	2,000.00
Sale of Publications	170.50	200.00
Interest Income	9,133.34	9,000.00
Miscellaneous	<u>879.84</u>	<u>700.00</u>
<b>TOTAL RECEIPTS</b>	<b><u>\$179,594.78</u></b>	<b><u>\$187,200.00</u></b>

EXPENDITURES - FISCAL YEAR 1977 and 1978

	<u>1977 Actual</u>	<u>1978 Budget</u>
<u>General Expenditures</u>		
Telephone & Telegraph	1,520.65	2,000.00
Postage	5,463.31	8,000.00
Printing	12,246.76	13,000.00
Office Supplies & Expenses	3,754.23	4,000.00

	<u>1977</u> <u>Actual</u>	<u>1978</u> <u>Budget</u>
<u>General Expenditures (continued):</u>		
Rent	12,410.11	11,000.00
Outside Services		1,500.00
Machine Rental		2,300.00
Advertising		1,000.00
Repairs & Maintenance	362.90	1,500.00
Miscellaneous	129.42	200.00
Insurance & Bonding	530.00	100.00
Refunds - Engineers	1,475.00	1,500.00
Refunds - Land Surveyors	65.00	200.00
Prior Year Payroll Tax	1,504.75	
TOTAL	<u>\$40,261.20</u>	<u>\$46,300.00</u>
<u>Professional Services</u>		
Legal Fees	15,425.18	20,000.00
Scoring Examinations	21,357.23	24,000.00
Audit Fee	384.93	700.00
Accountants Fees	950.18	1,000.00
Computer Services	2,409.38	2,500.00
Dues & Subscriptions	<u>2,035.00</u>	<u>2,200.00</u>
TOTAL	<u>\$42,561.90</u>	<u>\$50,400.00</u>
<u>Board Member Expenses</u>		
Board Member - Per Diem	5,668.00	7,000.00
Board Member - Transportation & Subsistence	6,689.00	

	<u>1977 Actual</u>	<u>1978 Budget</u>
<u>Board Member Expenses (continued)</u>		
Board Member - Subsistence		3,000.00
Board Member - Travel		4,000.00
Board Member - Other		400.00
Staff Travel Expense	<u>2,000.00</u>	
TOTAL	\$12,357.00	\$16,400.00
<u>Salaries and Wages</u>		
Salaries & Wages	64,383.58	69,000.00
Social Security Contributions	3,339.47	4,000.00
Retirement Contributions	4,701.80	5,000.00
Disability & Hospitalization Benefits	737.32	<u>1,100.00</u>
TOTAL	\$73,162.17	\$79,100.00
<u>Educational Funds</u>		
Educational Assistance	980.00	2,000.00
 TOTAL EXPENDITURES	<u>\$169,322.27</u>	<u>\$194,200.00</u>
Excess of Receipts over Expenditures	\$ 10,272.51	(\$ 7,000.00)





